FEASIBILITY STUDY

NC 171
From US 17 to Proposed US 64 Bypass
Beaufort and Martin Counties
R-2415

Prepared by
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I. DESCRIPTION

This project is included in the 1988-1996 Transportation Improvement Program for a feasibility study and/or right of way protection. The following report summarizes the findings of a preliminary study to determine appropriate improvements to the 16.7-mile segment of NC 171 from US 17 to the proposed US 64 Bypass in Jamesville. Location of the project is shown in Figure 1.

II. EXISTING ROUTE CHARACTERISTICS

NC 171 is classified as a rural major collector in the North Carolina Functional Classification System. The studied section of road has a pavement width of 20 feet with variable 2 to 6-foot shoulders. The existing pavement is in fair condition. For the most part, it is located on good alignment, however, some curve realignment and widening will be necessary to eliminate substandard curves ranging from 15 degrees (40 mph safe speed) to 7 degrees (50 mph safe speed). The vertical alignment along NC 171 is satisfactory and the majority of the project has safe passing sight distance.

Except for the northernmost section of the NC 171 project from SR 1538 to SR 1510 which is posted 45 mph, the entire studied length has a posted speed limit of 55 mph. Existing right of way along the project length is basically 60 feet; however, isolated locations have as much as 100 feet of right-of-way.

Adjacent land use is primarily woodland and agricultural with scattered residential development. Development increases as NC 171 approaches Jamesville.

Four bridges are located along the subject facility. They are described as follows:

County	Bridge No.	Location	Year Built	Sufficiency Rating	Length	Width
Beaufort	12	Singleton Swamp	1958	77.6	34'	26'
Martin	16	Hardison Mill Creek	1950	64.4	101'	24'
Martin	26	Lanier Swamp	1976	87.6	45'	35'
Martin	38	Copper Swamp	1980	99.3	45'	42'

All bridges are of concrete construction.

The adjoining section of NC 171, north of the proposed US 64 Bypass, is a two-laned, 42-foot curb and gutter roadway.

Traffic Volumes, Capacity, and Accident Record

Current traffic volumes range from approximately 1600 vehicles per day (vpd) to 2000 vpd. Estimated traffic volumes for year 2010 range from 3200 vpd to 4000 vpd, including 14% percent truck-tractor semi-trailer and 4% percent dual tired trucks.

Present capacity along the two-lane facility operating under rural conditions is approximately 6000 vehicles per day at level of Service C. Thus, present capacity is more than adequate to accommodate future traffic demands.

A total of 101 accidents were reported along the studied section of NC 171 during the three-year period of 1985-1987. This accident record yielded an accident rate of 2.97 accidents per million vehicle miles compared to the statewide average of 2.23 acc/mvm for all two-lane NC routes over the same period. Running off the road accidents were responsible for approximately half of the total accidents.

Need for Project

The present roadway has an inadequate pavement and shoulder width. Therefore, to enhance traffic operation and safety for trucks and other vehicles, the existing road should be upgraded to a wider two-lane facility. In addition, widening US 171 would reduce the potential for accidents and provide better access through two counties.

III. OTHER PROJECTS AFFECTING NC 171

There is one project in NCDOT's 1988-1996 Transportation Improvement Program which affects the subject portion of NC 171. Project R-405 includes upgrading US 64 from US 17 in Williamston to SR 1562 east of Jamesville to a four-lane divided facility. The proposed US 64 Bypass around Jamesville is part of this project. The NC 171 project ties into the bypass section which is located from 0.75 mile west of Jamesville City Limits to SR 1522 east of Jamesville (see Figure 2). Right-of-way acquisition for the bypass is scheduled in fiscal year 1991 and construction is scheduled in fiscal year 1993.

IV. RECOMMENDATIONS AND COSTS

Widening, resurfacing, and minor curve realignment along NC 171 are justified to provide an adequate two-lane facility. The recommended cross section of the improvement is a 24-foot pavement with 8-foot usable shoulders, 2 feet of which would be paved. The recommended minimum design speed for the studied facility is 55 MPH. All bridges would be retained, and except for the Copper Swamp bridge, would probably require rehabilitation and retrofitting. Also, bridge number 12 over Singleton Swamp should be replaced with a culvert. In addition, to conform with the bridge policy, bridge number 16 over Hardison Mill Creek should be widened to 30 feet. Widening this bridge will provide added safety to traffic with a high percentage of heavy trucks.

The total estimated cost of the recommended improvements is $10,100,000, including $7,300,000 for roadway construction and $2,800,000 for right-of-way. The right-of-way estimate is based on acquiring additional right-of-way along the existing 60-foot right-of-way sections to make a total right-of-way width of 80 feet.

V. ALTERNATIVES

Consideration was given to relocating NC 171 beginning at SR 1510 and paralleling existing NC 171 up to the proposed US 64 Bypass (See Figure 2). This new route would eliminate a substantial portion of truck traffic in the residential areas along NC 171 in Jamesville. However, the alternative alignment would cross Copper Swamp and thus, require the acquisition of approximately 1.3 acres of wetlands and an additional bridge.

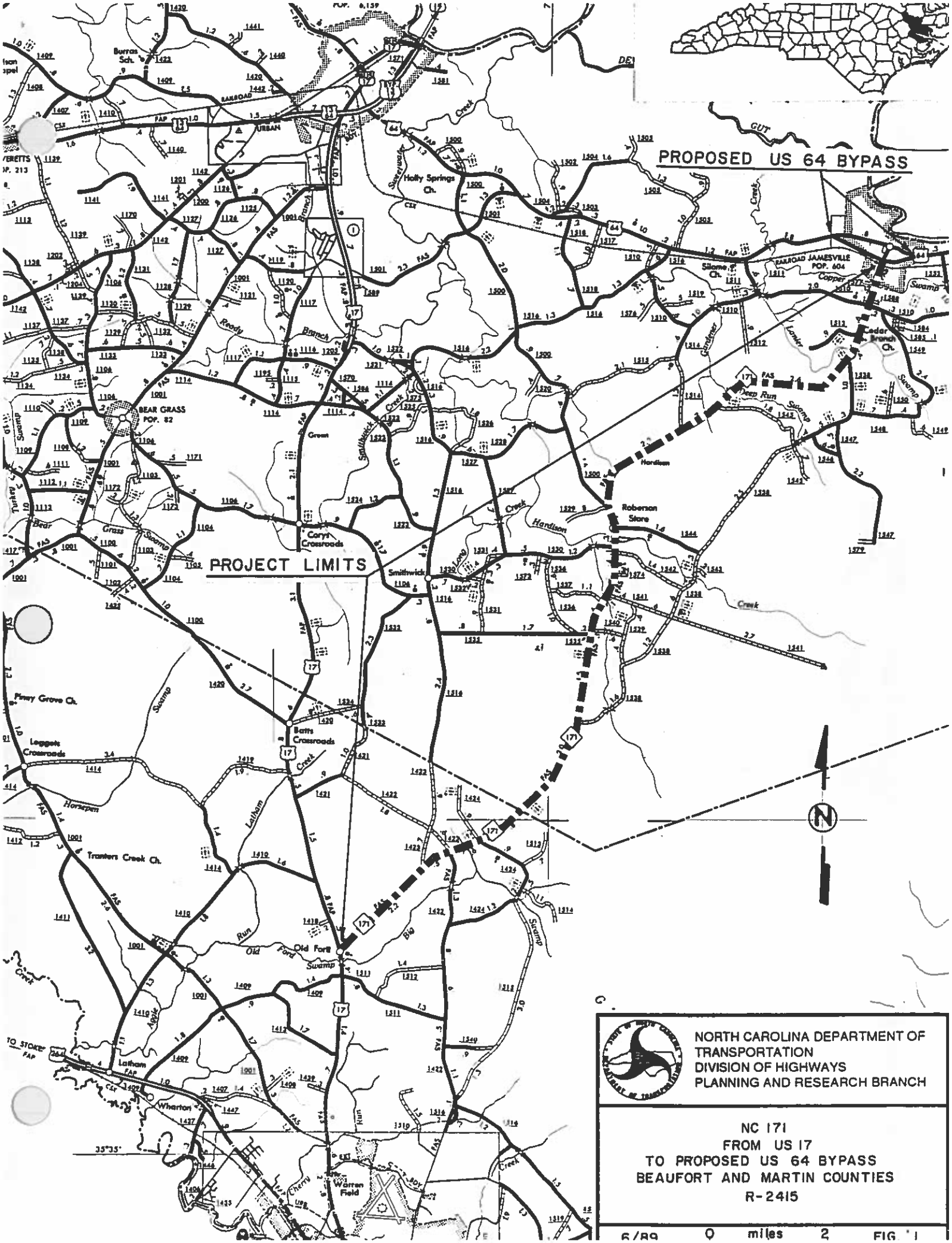
Construction along the alternative alignment would cost approximately $400,000 more than the recommended improved along the existing alignment, and it would displace four residences rather than three residences. Due to the higher cost and substantial wetland involvement, this alternative is not recommended.

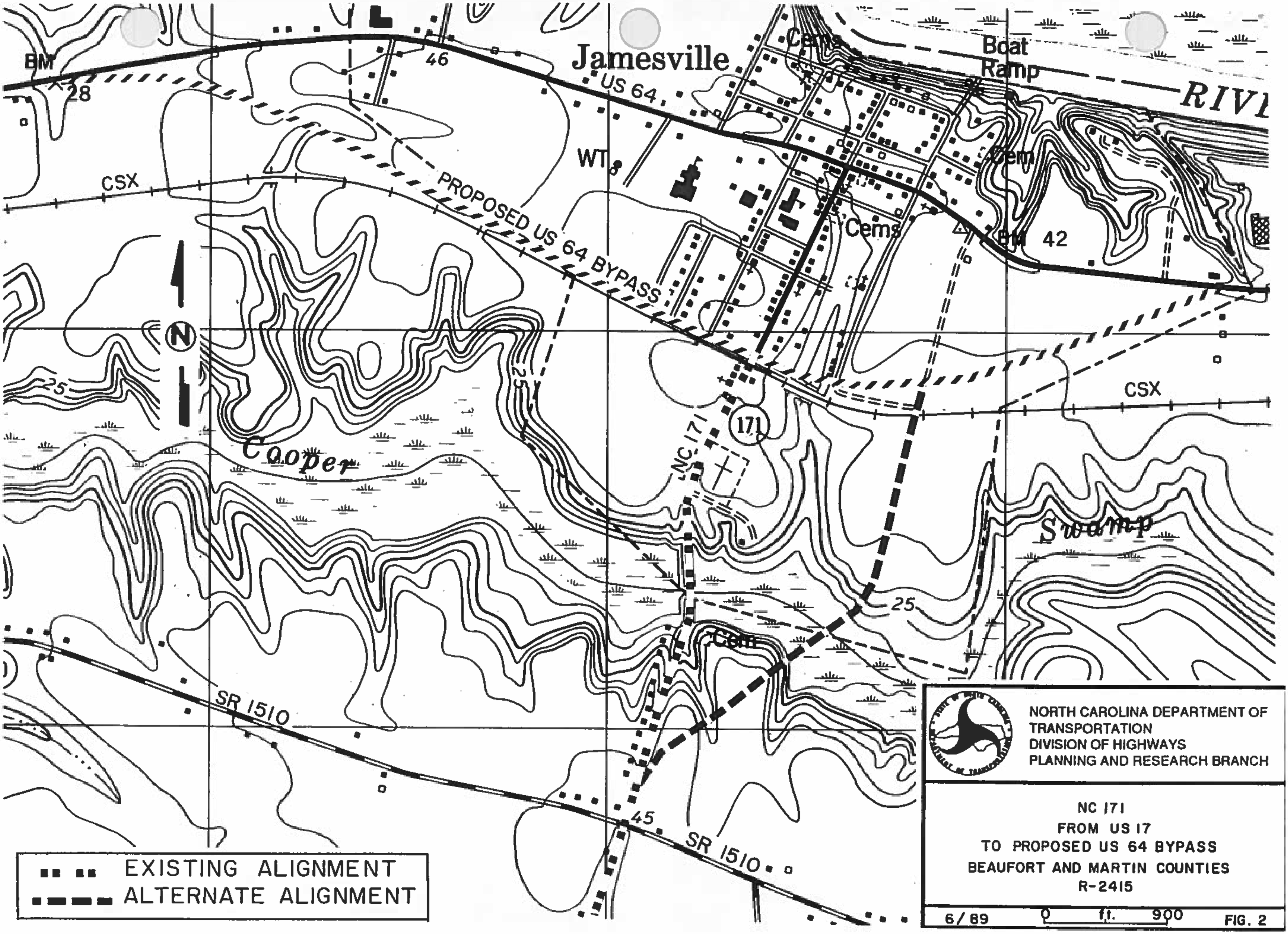
V. OTHER COMMENTS

The project should not have any significant adverse effects on the environment. Negative impacts include minor loss of farmland, woodland, and wetlands for the required additional right-of-way. In addition, the improvements will displace approximately three residences, and noise levels will increase for roadside development.

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will have to be evaluated in a detailed planning/environmental document prior to that time, and a final decision made as to the most appropriate location and improvement.

LC/sdt


PROPOSED US 64 BYPASS
PROJECT LIMITS
BEAR GRASS
POP. 82
Corys Crossroads
Smithwick
Roberson Store
Batts Crossroads
Leggett Crossroads
Piney Grove Ch.
Trantors Creek Ch.
Old Ford
Latham
Wharton
Holly Springs Ch.
Sharon Ch.
Cedar Branch Ch.
RAILROAD JAMESVILLE
POP. 604
Warren Field
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH
NC 171
FROM US 17
TO PROPOSED US 64 BYPASS
BEAUFORT AND MARTIN COUNTIES
R-2415
6/89
0 miles 2
FIG 1


Jamesville
US 64
RIVI
Boat
Ramp
Cems
Cem
Cems
BM 42
BM
28
46
WT
CSX
CSX
PROPOSED US 64 BYPASS
171
NC 171
Cooper
Swamp
25
25
25
Cem
SR 1510
SR 1510
45
EXISTING ALIGNMENT
ALTERNATE ALIGNMENT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NC 171
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6/89
0 ft. 900

FIG. 2